

U S West, Inc.  
1020 19th Street, NW  
Suite 700  
Washington, DC 20036  
Phone: 202-429-3129  
Fax: 202-467-4854

Rebecca W. Ward  
Manager - Resource Center  
and MFJ Information -  
Washington, DC

LOCKET FILE COPY ORIGINAL  
**USWEST**

RECEIVED  
MAR 24 1997

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

March 24, 1997

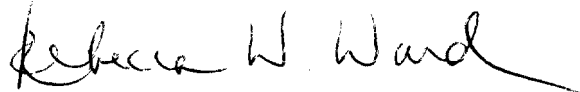
Mr. William Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W.  
Room 222  
Washington, D.C. 20554

Dear Mr. Caton:

The enclosed 3.5 diskette is in compliance with requirements stated in the Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry, FCC 96-488, released December 24, 1996. The 3.5 diskette, formatted in Word Perfect 5.1 for Windows in "read only" mode, contains Comments filed by U S WEST today in CC 96-262.

Should you have any questions, please call me at the above number.

Sincerely,



Rebecca W. Ward

Enclosure

No. of Copies rec'd  
List ABCDE

0+4

RECEIVED

MAR 24 1997

DOCKET # 96-262

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

In the Matter of	)	
	)	
Access Charge Reform	)	CC Docket No. 96-262
	)	
Price Cap Performance Review for Local	)	CC Docket No. 94-1
Exchange Carriers	)	
	)	
Transport Rate Structure and Pricing	)	CC Docket No. 91-213
	)	
Usage of the Public Switched Network by	)	CC Docket No. 96-263
Information Service and Internet Access	)	
Providers	)	

**COMMENTS OF U S WEST, INC. IN RESPONSE TO NOTICE  
OF INQUIRY CONCERNING INFORMATION SERVICE PROVIDERS**

Robert B. McKenna  
Suite 700  
1020 19th Street, N.W.  
Washington, DC 20036  
(303) 672-2861

Attorney for  
  
U S WEST, INC.

Of Counsel,  
Dan L. Poole

March 24, 1997

## TABLE OF CONTENTS

	<u>Page</u>
SUMMARY .....	ii
I. INTRODUCTORY STATEMENT -- THE ESP EXEMPTION .....	2
II. REGULATORY HISTORY AND BACKGROUND .....	9
III. INTERNET NETWORK IMPACTS .....	15
A. ESP/Internet Usage Patterns .....	15
B. Case Studies In Network Blockage .....	20
IV. PROBLEMS INHERENT IN CURRENT SYSTEM .....	22
A. Regulatory Issues .....	22
B. Economic Issues.....	26
V. CONCLUSION AND RECOMMENDATIONS .....	27

## SUMMARY

In this proceeding, the Commission seeks information on various aspects of the provision of information services via the exchange facilities of LECs. As the Commission well recognizes, particularly with the development of the Internet, enhanced services provisioning (generally the terms information service and enhanced services are used interchangeably), more and more undercuts many of the traditional notions which have provided the basis for interstate regulation of communications by this Commission. With the passage of the new Telecommunications Act of 1996 and the onset of local exchange competition, the need to assess the proper place of enhanced services in the Commission's regulatory structure becomes urgent.

These Comments focus almost exclusively on an aspect of enhanced services regulation commonly known as the "ESP exemption." Under the ESP exemption, providers of enhanced services are treated as end users and are thereby able to "leak" interstate traffic into local exchanges without paying carriers' carrier charges. The Commission's devised solution to the fact that this "leakage" would permit interstate use of LECs' switching facilities without payment, called the "Special Access Surcharge," does not work. Thus, ESPs which provide interstate services generally are not being assessed proper interstate charges.

With the explosive growth of the Internet and other on-line data base services, this jurisdictional mismatch has taken on more severe consequences. ISPs and other providers of gateways between circuit switched LEC networks and

packetized data networks are essentially caught between technologies. Data networks are not generally time sensitive -- costs are incurred only when data is being sent. On the other hand, circuit switches establish a real-time connection which is held-up whether data is being sent or not. When an end user connects to an information source through a local exchange and the Internet, the circuit switch is incurring costs throughout the entire session between the end user and the ISP. The Internet data network, on the other hand, incurs costs only during the course of an actual communication.

In those cases where local exchange services are priced on a flat-rated basis (which is the case, via regulatory decisions, throughout U S WEST's territory), there is no incentive for end users or ISPs to limit their use of local exchange services to a manner which reflects efficiency or the increased costs which extensive holding times impose on LECs. In these comments, U S WEST documents that this lack of incentive has driven holding times for ESPs to levels dramatically in excess of holding times for other users. These extensive holding times are in turn causing local exchange network providers to incur extra costs which must be borne by other customers. The problem is extensive and serious.

U S WEST suggests herein that the Commission commence an expedited NPRM in order to eliminate the ESP exemption. Such elimination should not look towards moving ESPs to interstate switched access charges until after access reform itself has brought those prices closer to economic costs. The NPRM should also look toward the manner of bringing about a realistic solution to the ESP exemption problem. The ESP exemption causes difficulty because cost causation

principles require that ESPs be charged usage sensitive prices for services which cause LECs to incur usage sensitive costs to provide. The problem can be solved at either the federal or the state level. The Commission should determine which jurisdiction (federal or state) has the greatest stake and the greatest expertise in examining the rate structure which should govern the interconnection between circuit switched LEC networks and packet switched data networks. If it is found that the Commission is the proper jurisdiction to deal with the ESP exemption, the Commission should do so expeditiously. If it is found that state regulators present the proper forum for resolving the ESP issue, the Commission should state so unequivocally and forebear (on a formal basis) from regulating ESP/LEC connections.

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

In the Matter of	)	
	)	
Access Charge Reform	)	CC Docket No. 96-262
	)	
Price Cap Performance Review for Local Exchange Carriers	)	CC Docket No. 94-1
	)	
Transport Rate Structure and Pricing	)	CC Docket No. 91-213
	)	
Usage of the Public Switched Network by Information Service and Internet Access Providers	)	CC Docket No. 96-263
	)	

**COMMENTS OF U S WEST, INC. IN RESPONSE TO NOTICE  
OF INQUIRY CONCERNING INFORMATION SERVICE PROVIDERS**

U S WEST, Inc. ("U S WEST") hereby submits its comments in response to the Federal Communications Commission's ("FCC" or "Commission") Notice of Inquiry ("Notice") in the above-captioned docket.<sup>1</sup> The Notice seeks information on how regulations (federal and state) can or should be modified in order to provide the most efficient and cost effective development of access by end users to information services. In this regard, the Notice focuses primarily, although not exclusively, on a particular type of information service -- that provided by what is popularly called

---

<sup>1</sup> In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, and Usage of the Public Switched Network by Information Service and Internet Access Providers, CC Docket Nos. 96-262, 94-1, 91-213 and 96-263, Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry, FCC 96-488, rel. Dec. 24, 1996.

the Internet. The Notice observes that the Notice of Proposed Rulemaking (of which the Notice is an integral part) specifically declined, in proposing to reform interstate access charges, to address the so-called “ESP exemption” from switched access charges, and invites comments on a variety of topics seemingly directed toward that highly-controversial topic.<sup>2</sup> In these Comments, we use the term ESP to refer to Enhanced Service Provider. Over the years, the term “ISP” has taken on two separate meanings: Information Service Provider and Internet Service Provider. As the industry now generally designates “ISP” as meaning Internet Service Provider, we so use the term in these Comments.<sup>3</sup> We focus almost entirely on the ESP exemption.

## I. INTRODUCTORY STATEMENT -- THE ESP EXEMPTION

The ESP exemption from switched access charges is one of the most politically charged, but least understood, aspects of the Commission’s existing convoluted and controversial access charge rules.<sup>4</sup> Essentially, while commonly denoted as an exemption from the payment of interstate switched access charges for providers of interstate enhanced services, the exemption is really a decision to treat ESPs as end users with “leaky PBXs” who are supposed to pay for their interstate

---

<sup>2</sup> Id. ¶ 331.

<sup>3</sup> Actually, the term Internet Access Service Provider may be even more accurate.

<sup>4</sup> In the Matter of MTS and WATS Market Structure, Memorandum Opinion and Order, 97 FCC 2d 682, 713-14 ¶ 81 (1983) (“MO&O”); and see In the Matter of Amendments of Part 69 of the Commission’s Rules Relating to Enhanced Service Providers, Order, 3 FCC Rcd. 2631 (1988).



use of local exchange network switching facilities via payment of the "special access surcharge" established in Section 69.115(c) of the Commission's rules.

The existing interstate access structure recognizes only two classes of users of local exchange networks for interstate purposes -- end users and carriers. Under the existing regulatory structure,<sup>5</sup> ESPs are declared to be end users, not carriers, and accordingly share in all of the regulatory treatment of end users.<sup>6</sup> Because only carriers pay interstate switched access charges (more accurately, are required to pay such charges) for the interstate use of local exchange switching facilities, ESPs, by dint of their end-user classification alone, share with all other non-carriers the ability to "leak" interstate traffic into the local exchange without paying the usage sensitive switched access charges which a carrier must pay. This does not mean that ESPs obtain interstate service for free. It simply means that they are shifted to a different recovery mechanism for interstate payments -- in the form of flat-rated special access surcharges (plus, of course, appropriate subscriber line charges).

The universe of entities which are, or could be if anyone cared, classified as ESPs is huge and diverse. It may even be impossible to determine just how many entities exist which could be thus classified -- their use of the local exchange network as end users would seem to preclude ready identification. Thus, U S WEST does not recommend that the Commission attempt to identify all ESPs

---

<sup>5</sup> 47 CFR § 69.2(m).

or to address the entire scope of ESP providers as a generic class -- in this docket or any other. The class is simply too large and diverse. The problems caused by the ESP exemption, such as they are, are focused in a manner most readily identifiable for one class of ESPs -- a class which now includes ISPs within its number.

Specifically, the class of ESPs which demands consideration by the Commission consists of those who obtain their ESP status either partially or entirely by interconnecting a circuit switched "voice" transmission with a packet switched data transmission. It will be remembered that many of the initial controversies surrounding both the definition of enhanced services and the establishment of the ESP exemption in the first place came about because of the Commission's decision to classify the functionality of converting an asynchronous "voice" signal to a packetized data signal as an enhanced service.<sup>7</sup> In this context, the interface between a circuit switched network and a packet switched data network would always be enhanced under the Commission's rules. When the Commission ultimately decided that providers of enhanced services would be classified as end users,<sup>8</sup> the logical conclusion followed that the provider of the

---

<sup>6</sup> See In the Matter of Northwestern Bell Telephone Company Petition for Declaratory Ruling, Memorandum Opinion and Order, 2 FCC Rcd. 5986 ¶ 1 (1987) "enhanced service providers are treated as end users for access charge purposes."

<sup>7</sup> In the Matter of Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), Final Decision, 77 FCC 2d 384, 420-21 ¶¶ 97-98 (1980) wherein the Commission included in the rubric of enhanced services such services as "voice or data storage and retrieval applications" such as voice mail.

<sup>8</sup> See note 6 supra.

circuit/packet connection would be classified as an end user.<sup>9</sup> Of course, as an end user, the ESP does not now pay carrier's carrier charges under the Commissions rules.

From the beginning this dual analysis created conceptual problems, because many providers of packet switched services seemed to function exactly like interstate carriers. The problem was exacerbated when the Commission ruled that the packet switched services of "dominant" carriers were basic in nature (not enhanced),<sup>10</sup> which created a discrimination between the packet switched services of non-dominant carriers (enhanced in their entirety) and those of dominant carriers (partially basic and partially enhanced).

From the point of view of the providers of circuit switched services (i.e., local exchange carriers ("LEC")), a serious technological mismatch was created by the fact that packetized transmissions do not place a real time strain on the packet network (because packet networks are generally sensitive only to actual packets being transmitted), while circuit switches are extremely time sensitive. Thus, a packet switched network provider does not care if a user remains "connected" to the packet network for protracted periods of time because actual costs are incurred only

---

<sup>9</sup> The Commission did classify protocol conversions necessary to connect two basic packet networks as basic, but U S WEST never experienced such a configuration. See In the Matter of Communications Protocols under Section 64.702 of the Commission's Rules and Regulations, Memorandum Opinion, Order, and Statement of Principles, 95 FCC 2d (1983).

<sup>10</sup> In the Matter of American Telephone and Telegraph Company, Memorandum Opinion and Order, 91 FCC 2d 1 (1982); In re Application of American Telephone and Telegraph, Memorandum Opinion and Order and Authorization, 94 FCC 2d 48 (1983) (Basic Packet Switching Service).

when packets are transmitted. Circuit switches, on the other hand, when called upon to create a circuit by a customer, keep that circuit up and operational at all requested times whether or not any actual transmission is taking place. Thus, the packet provider's costs are essentially not time sensitive, while the circuit provider's costs are time sensitive. A customer connecting to a packet network through a circuit network was therefore causing each network to incur costs in two quite different ways. If usage of the circuit network was to be charged entirely on a flat-rated basis (as opposed to a time sensitive basis), and such temporal usage was to be dramatically increased by the non-time characteristics of a connecting packet network, the circuit switched provider would be forced to charge other customers higher prices to support the cost of circuit switching network time connecting to the packet network.

Regulators have been aware of this mismatch for some time, but, until recently, data had not been accumulated demonstrating the results of this anomaly on customer usage and cost causation. Now, however, with the explosive growth of the Internet, this data is becoming available. The new information is dramatic. In a nutshell, end users connecting to ISPs and similar ESPs who convert the end-users' voice transmissions to data transmissions have established a pattern of holding times dramatically in excess of all other voice transmissions which are not converted and connected to a data network. Because of the cost characteristics of the data network, the data network supplier has no incentive to reduce end-user holding times between the data network node and the end user (although America On Line's recent experience with flat-rated charges demonstrates that even data

transmission providers are well advised to be wary of unlimited usage packages). End users similarly have no incentive to reduce holding times on circuit switches if their charges are not usage sensitive. However, these expanded holding times do increase the switching costs of the circuit switching provider. In at least U S WEST's case, U S WEST is unable to charge usage sensitive prices to either the end-user customer or the packet switching service provider. This means that the flat-rated prices charged to all other end-user customers must be raised to subsidize the service used to connect end users to data networks.

It would seem at first blush that this issue is not really one for the Commission to address at all. After all, the rates between an end user and a local exchange provider are within the province of local commissions, not this Commission. However, the existence of the ESP exemption causes many ESPs to argue that they have a federal right to pay the same intrastate amount for local exchange access as any other end user. Indeed, for all purposes other than paying carriers' carrier charges for interstate access, many ESPs seem to view themselves as far more interstate than intrastate. Certainly this is so in the case of at least the most publicly visible ESPs -- those which provide access to the Internet and other large providers of information and access to information. While the Commission's power to preempt the entire scope of state regulation over ESPs seems to have been diminished substantially by the Ninth Circuit Court of Appeals in California,<sup>11</sup> we submit that the Commission would nevertheless have the legal authority to require

---

<sup>11</sup> See People of State of Cal. v. FCC, 39 F.3d 919 (9th Cir. 1994), vacated in part and remanded.

that all ESPs with substantial interstate usage to pay carriers' carrier charges for all network access unless they (or LECs) can distinguish between interstate and intrastate ESP traffic using local exchange network facilities, sort of a reversal of the special access surcharge situation. The situation today gives everyone the worst of all possible worlds -- with what appears to be a federal rule applying state rates while, at the same time, stultifying states' and LECs' abilities to solve the problem. So long as the traffic is significantly interstate and inseparable, the FCC would have the authority to relegate the entirety of the traffic to the interstate jurisdiction. By the same token, the FCC would have the power to forebear from dealing with the ESP exemption issue at the interstate level and leave its solution entirely to state regulators. The status quo, however, is not acceptable.

This is the crux of the ESP exemption issue as it faces the Commission in this proceeding. Data networks which use modern data transmission techniques by their very nature put a disproportionate strain on circuit switches when they interconnect with traditional voice networks. This strain can be accommodated for through proper pricing -- which must take account of the time sensitive elements of the local circuit switch. However, because the technology-driven definition of enhanced services under the Commission's rules causes these same data networks to be classified as end users, rather than carriers, achieving this proper pricing has become extraordinarily elusive. The ultimate goal must be to move toward a usage sensitive pricing structure for ESP access to local exchange switching facilities -- interstate and intrastate. If the Commission chooses not to directly solve this

riddle, it should make it clear that nothing in its rules inhibit state regulators from seeking fair and equitable solutions to the ESP exemption.

## II. REGULATORY HISTORY AND BACKGROUND

An understanding of the origins and regulatory background of the ESP exemption can go a long way in explaining what the exemption is, and why traditional ideas of how to “fix” the exemption have proven so utterly unsuccessful to date. To be strictly accurate, the ESP exemption is not an exemption at all. Rather, it is a manifestation of the “leaky PBX” phenomenon which, at least on paper, is dealt with via what is called the “special access surcharge.” In point of fact, the current system does not work. But an understanding of the current system is critical to beginning sensible analysis of this extremely thorny issue of how ESPs should pay for the strains which at least some of them place on local exchange switching facilities.

The ESP exemption has its roots in the rules established in the First Computer Inquiry.<sup>12</sup> Providers of “data processing” were not deemed to be common carriers and were not regulated. The line between telecommunications service and data processing service was always a difficult one to draw (a fact which led to

---

<sup>12</sup> In the Matter of Regulatory and Policy Problems Presented by the Interdependence of Computer and Communication Services and Facilities, Tentative Decision of the Commission, 28 FCC 2d 291 (1970), Final Decision and Order, 28 FCC 2d 267 (1971), aff’d in part sub. nom., GTE Service Corp. v. FCC, 474 F.2d 724 (2d Cir. 1973), on remand, 40 FCC 2d 293 (1973).

Computer Inquiry II).<sup>13</sup> Thus, when the providers of centralized computing services (such as Tymshare) established their own packet networks, they were originally considered to be providing an entirely data processing service because all customer interaction was with the Tymshare computers. However, when the efficiencies of packet technology resulted in these data processing providers having excess capacity which could be efficiently sold to other data processing providers, the Commission determined that the resale of this packet transmission service constituted a carrier service and required that tariffs be filed. Tariffs were filed for packet switched carrier services by Tymnet (a subsidiary of Tymshare) and Telenet (ultimately purchased by GTE). These packet carriers did not purchase ENFIA services like facilities-based carriers -- instead purchasing standard tariffed end user and private line services for local exchange interconnection.<sup>14</sup>

When the Computer II rules were adopted in 1980, the function of protocol conversion became an enhanced service. Tymnet and Telenet needed to figure out what to do with their existing interstate carrier tariffs. Telenet immediately withdrew its tariffs in their entirety. Tymnet, on the other hand, revised its tariffs to eliminate the enhanced functionality (in a manner not unlike existing LEC

---

<sup>13</sup> In the Matter of Amendment of Section 64.702 of the Commission's Rules and Regulation, Notice of Inquiry and Proposed Rulemaking, 61 FCC 2d 103 (1976), Tentative Decision and Further Notice of Inquiry and Rulemaking, 72 FCC 2d 358 (1979), Final Decision, 77 FCC 2d 384 (1980), Memorandum Opinion and Order, 84 FCC 2d 50 (1980), Memorandum Opinion and Order on Further Reconsideration, 88 FCC 2d 512 (1981).

<sup>14</sup> "Tymnet and Telenet, provide untariffed packet switching and protocol conversion to end users over common carrier facilities." In the Matter of Public Packet



packet switching tariffs), which led to a petition to reject filed by Telenet.

Ultimately it was determined that the entirety of the packet switched service provided by a non-carrier (i.e., on a resold basis) was a non-carrier service and that tariffs were not required. Tariffs for dominant carriers providing packet services were still required, however (since, of course, protocol conversion functionality). It has generally been assumed that all enhanced services rely on a facilities-based carrier service for underlying transmission purposes, a surmise which the Commission recently confirmed.<sup>15</sup>

In the meantime, when the Commission adopted its access charge rules in February of 1983, what are now carriers' carrier charges were imposed on all "carriers and enhanced service providers" who made use of local exchange switching facilities for the origination and termination of interstate traffic.<sup>16</sup> On reconsideration, the Commission modified this rule as part of its dealing with another difficult phenomenon -- the ability of PBXs to leak interstate traffic undetected into a local exchange via an interstate private line.<sup>17</sup> Basically, the Commission observed that "leaky PBXs" (a status now shared by ESP nodes) could leak such traffic into local exchanges without anyone being able to measure how much of the actual usage between the PBX and the local exchange was interstate in

---

Switching Service, Memorandum Opinion and Order, 4 FCC Rcd. 3382, 3384 n.5 (1989).

<sup>15</sup> In the Matter of Independent Data Communications Association, Inc., Memorandum Opinion and Order, 10 FCC Rcd. 13717 (1995).

<sup>16</sup> In the Matter of MTS and WATS Market Structure, Third Report and Order, 93 FCC 2d 241 (1983).

nature.<sup>18</sup> Thus, all users of leaky PBXs could use local exchange switching facilities for interstate purposes without contributing to the interstate costs of such facilities.

In the technology and market of the mid 1980s, the Commission devised as a surrogate a surcharge mechanism which was viewed from its inception as a stopgap measure. Because most leaky PBXs at the time connected to an interexchange carrier point of presence ("POP") via a LEC-provided private line (special access line, to use the Commission's parlance), the Commission decided to collect for lost LEC interstate feature group switching revenues by requiring the imposition of a \$25.00 surcharge on each interstate special access circuit connected to a PBX or similar device unless the owner of the device certified that the device was not capable of leaking interstate traffic into the local exchange.<sup>19</sup> This surcharge was to be maintained until LECs had devised a way to measure the amount of interstate traffic which actually leaked into the local exchange.<sup>20</sup>

This interim solution was unsatisfactory from the beginning, and the Commission has tried on a variety of occasions to devise a more rational solution to the leaky PBX problem (and the concomitant problem posed by the \$25.00 special access surcharge). The surcharge itself was the subject of a rulemaking which died without action,<sup>21</sup> and rulemakings initiated in 1987 to devise better access rules for

---

<sup>17</sup> MO&O, 97 FCC 2d at 711-12 ¶ 78.

<sup>18</sup> Id.

<sup>19</sup> Id. at 719-20 ¶ 88.

<sup>20</sup> Id.

<sup>21</sup> In the Matter of MTS and WATS Market Structure, Notice of Proposed Rulemaking, Phase I, FCC 84-604, 49 Fed. Reg. 50413 (1984).

both ESPs and private networks went nowhere.<sup>22</sup> Thus, the old surcharge system which is based entirely on the assumption that all leaky PBX traffic (including ESP traffic) also traversed a LEC special access line (and paid the surcharge) remains the only method of collecting interstate switching costs from ESPs using local exchange switching facilities for interstate traffic.

Whatever its merits at divestiture time, the surcharge method of recovering usage sensitive interstate switching costs is totally unsatisfactory now. Several obvious weaknesses in relying on the special access surcharge for any purpose are self evident and relatively non-controversial.

- First, as is noted above and will be documented further herein, the ESP exemption problem is caused by the fact that traffic sensitive switching costs are being recovered on a non-traffic sensitive basis via local flat rates. The special access surcharge, to the extent that it works at all, represents another attempt to recover traffic sensitive costs on a non-traffic sensitive basis. Because it is a flat-rated charge, even when it is collected, it does not contribute to solving the mismatch between traffic sensitive switching costs and flat-rated recovery.
- Second, ESPs do not pay the special access surcharge. This is a simple fact of life. This is not to be overly critical of ESPs -- it is possible to argue that the special access surcharge does not apply to data circuits at all -- but reliance on

---

<sup>22</sup> In the Matter of Amendments of Part 69 of the Commission's Rules Relating to Enhanced Service Providers, Notice of Proposed Rule Making, 2 FCC Rcd. 4305 (1987); In the Matter of Amendment of Part 69 of the Commission's Rules Relating to Private Networks and Private Line Users of the Local Exchange, Notice of Proposed Rulemaking, 2 FCC Rcd. 7441 (1987), proceeding terminated, Order, 10 FCC Rcd. 12130 (1995).

the special access surcharge as making up for the lost interstate traffic sensitive switching revenues which are denied to LECs because of the ESP exemption is not realistic.

- Third, even if the surcharge were being paid, special access/private line services are among the most competitive services offered by LECs. Adding what is tantamount to a switching subsidy to LEC special access services will be to simply make it more difficult for LECs to market their basic special access products.
- Fourth, the fundamental assumption on which the surcharge is predicated -- that all users who connect leaky PBXs to local exchange networks use LEC-provided special access services -- is no longer valid. When an ESP or other leaky PBX user connects its node or switch to an interexchange carrier's ("IXC") POP via a competitive access provider, the surcharge is lost to the LEC.

Competitive providers of special access services now exist in all major cities, and their vitality was growing even before the Telecommunications Act of 1996 revolutionized local exchange market assumptions. Similarly, many ESPs, particularly ISPs, have taken to collocating their nodes at an IXC POP, again eliminating both the special access line formerly purchased from the LEC (which is appropriate in a competitive market) and the switching-related special access surcharge (which is not appropriate). As this surcharge reflects switching costs, not special access costs, the loss of surcharge revenue based on use of competitive providers of special access represents an uneconomic revenue

reduction for the LEC which is utterly unrelated to the proper functioning of a competitive market.

### III. INTERNET NETWORK IMPACTS

#### A. ESP/Internet Usage Patterns

Internet Service Providers provide, among a number of other things, connectivity between end users whose basic service is via the traditional circuit switched network and the global packet network called the Internet.<sup>23</sup> In providing this service, ISPs convert asynchronous voice protocols into Internet-compatible protocols. The Internet is a global network, and Internet communications are national and global in scope. ISPs today universally purchase flat-rate connections to the U S WEST local exchange networks:

- Line side service—92%
  - Centrex—70%
  - 1MB—15%
  - 1FB—7%
- Trunk-side service (DSS and ISDN)—8%

---

<sup>23</sup> We recognize that it can be misleading to attribute too many of the attributes of what is now known as the “Public Switched Network” to the Internet. As a physical network, the Internet is a world-wide system of computers connected by several interconnecting backbone transport networks. However, for purpose of this analysis, it is useful to consider the Internet as being more holistic than is actually the case.

As discussed above, because of the packet nature of Internet transmissions, the concept of a transmission circuit so critical to circuit switched transmissions has little meaning. Costs are incurred only when data is transmitted. In a normal transmission, the end user calls the ISP. A circuit switched connection between the end user and the ISP is established and is maintained throughout the entire session. For all intents and purposes, this connection looks like a voice call to the LEC, and, indeed, it uses the network in exactly the same way as does a voice call. However, the transmissions between the ISP and the information source (i.e., the other end of the Internet transmission) are packet in nature, and, accordingly, there is no established circuit except for the virtual circuits actually in use when a transmission is taking place.

To illustrate: An end user places a call to an ISP. The call is delivered from the end user to the ISP over the circuit network, via the ISP's flat-rated Centrex service, and a circuit connection is established. This connection, including its use of the LEC switch, remains fully engaged during the entire session. Once the connection has been established, assume further that the end user desires a particular set of information from another state. The ISP establishes the desired connection to the information source over the Internet on a packetized basis using a data network. Once the information has been located, it is normally downloaded for review by the end user at the end user's premises computer (where it is stored temporarily). The end user browses the information, occasionally requests more detail (repeating the pattern noted above), and otherwise enjoys the benefits of the huge amounts of information now available over the Internet. While much of the

information received by the end user has its locus in other states (or in other countries), the amount of time that an actual interstate or international transmission is taking place may be quite limited as a percentage of the total time the end-user customer is connected to the ISP due to the amount of data requested and the fact that the connection is maintained when no data is being requested. This is simply the result of the time-sensitive nature of the connection between the end-user customer and the ISP, the time insensitive nature of the connection between the ISP and the information services connected via the Internet, and the fact that the circuit connection is maintained during the entire session while the packet connection is maintained only when data is actually being transmitted.

It has been intuitively obvious that this phenomenon would lead to longer holding times for connections between end users with circuit switched service and data networks. In order to determine whether this predicted holding time level for end user to ESP connections was accurate, U S WEST conducted a detailed study, beginning in the Fall of 1995. Studies were conducted on four types of ESPs: Value Added Networks, Bulletin Board Services, On-line Providers and Internet Service Providers. Each ESP line was studied 24-hours a day, seven days a week, for at least four weeks. The studies actually began in February of 1996 and concluded in August, 1996. This study (conducted by U S WEST employee Mark Holling) is attached hereto as Exhibit A. The results are conservative because the usage data was collected prior to the recent rash of flat-rated service offerings. Section B below indicates that holding times may have dramatically increased recently above those documented in the exhibit.

The Holling Study documented the following:

- ESPs within the categories studied use the LEC circuit switched network up to six times more (on a time basis) than the office average during the busy hour, and up to eight times more than the office average during the hunt group busy hour.
- U S WEST has submitted results from this study in ex parte presentations on June 28, 1996 and October 1, 1996.
- The average holding time per call for ESPs is 14 minutes, compared to four minutes for a residence line and two minutes for a business line.
- Over 40% of ESP calls are longer than five minutes, while only 16% of residence and eight percent of business calls are longer than five minutes. Virtually all residence and business calls are completed within 30 minutes. More than 15% of ESP calls are longer than 30 minutes.
- During a 24-hour time period, ESPs have consistently longer calls than typical residence and business users across all times of the day -- up to 14-times longer than business users and five-times longer than residence users. ESP usage per line is consistently longer than IXC usage.
- U S WEST was able to substantiate that end-user customers often log into an ESP node (generally an ISP node) and leave their computers on all day, resulting in holding times in excess of 17 hours.
- Busy hour distribution of ESPs demonstrates unique characteristics. While studied central offices have 90% of their busy hours concentrated between 7:00 A.M. and 6:00 P.M, the majority of ESP busy hours (62%) are after 6 P.M.



Conventional wisdom generally dictates that, as long as there are only a few ESP lines into a central office, there should not be a shift in busy hour (which would require additional investment). However, with ESP usage up to eight times greater than usage on the normal business line, a relatively small number of ESP lines could have a disproportionate impact on the central office.

- The incremental costs of serving ESPs are different than the incremental costs of serving other LEC customers. Current U S WEST TELRIC [Total Element Long Run Incremental Cost] models assume \$3.00 of monthly incremental usage costs for an average business line. ESP monthly incremental usage costs ranged from approximately \$5.00 (for bulletin boards) to over \$24.00 (for ISPs -- more than eight times that of a business line). This cost is determined by the number of call attempts and the length of the call, and is therefore a direct result of longer holding times caused by ISPs.
- Based on the study results, a conservative five-year projection of ESP usage and lines was conducted. Starting with a 1996 estimate of 98,000 ESP lines, ESP usage was projected to more than double to almost 240,000 lines by 2001. These figures translate into 0.63% of total lines in 1996 and 1.3% of total lines in 2001.
- On the other hand, ESP usage of local exchange switches is estimated at 14.3 billion MOU [Minutes of Use] in 1996, or 5.03%. This usage is conservatively projected to increase to more than 34 billion MOU by 2001, or almost 9.0%.

The Holling Study documents that these non-traditional usage patterns of ESPs will require substantial additional LEC investment above and beyond what would be projected for similar growth to meet the needs of other customers.